Colby College	**)**	**Departmental**
Kennebec County	**)**	**Findings of Fact and Order**
Waterville, Maine	**)**	**Air Emission License**
A-107-71-M-R/M	**)**	

After review of the air emissions license renewal/ minor revision application, staff investigation reports and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 M.R.S.A., Section 344 and Section 590, the Department finds the following facts:

I. REGISTRATION

A. Introduction

Colby College of Waterville, Maine has applied to renew their Air Emission License permitting the operation of emission sources associated with their educational facility. Colby College has also requested minor revisions to include a new stationary internal combustion engine and to increase their #6 fuel oil limit from 1,200,000 gallons per year to 1,300,000 gallons per year.

B. Emission Equipment

Colby College is authorized to operate the following equipment:

Fuel Burning Equipment

Equipment	Maximum Capacity (MMBtu/hr)	Maximum Firing Rate (gal/hr)	Fuel Type, % sulfur	Stack #
Boiler 10A	37.1	247.5	#6, #2, spec. waste oil, 0.5%	9
Boiler 10B	37.1	247.5	#6, #2, spec. waste oil, 0.5%	9
Boiler 10C	37.1	247.5	#6, #2, spec. waste oil, 0.5%	9
SICE #3*	0.56	4.1	#2, 0.05%	-

* New source

Emergency Electrical Generation Equipment

Equipment	Maximum Capacity (MMBtu/hr)	Firing Rate (gal/hr)	Fuel Type, % sulfur
SICE #1	2.5	17.5	#2, 0.05%
SICE #2	4.9	35.8	#2, 0.05%

Miscellaneous Equipment

Equipment	Pollution Control Equipment
Gasoline storage tank	none
Solvent Degreaser	none

C. Application Classification

The application for Colby College includes licensing of existing equipment and includes licensing of a new stationary internal combustion engine (SICE) and increasing the #6 fuel oil limit. The new SICE and #6 fuel oil limit increase each do not result in emissions greater than four tons per year for any criteria pollutant or greater than eight tons per year for total pollutants. Therefore, the license is considered to be a renewal of current licensed emission units, and a minor revision to include a new SICE and to increase the #6 fuel oil limit.

II. BEST PRACTICAL TREATMENT (BPT)

A. Introduction

In order to receive a license the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in Chapter 100 of the Air Regulations. Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas.

BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in Chapter 100 of the Air Regulations. BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

BPT for existing emissions equipment means that method which controls or reduces emissions to the lowest possible level considering:

- the existing state of technology;
- the effectiveness of available alternatives for reducing emission from the source being considered; and
- the economic feasibility for the type of establishment involved.

Source Description

Boilers #1 through #9 listed in air emission license A-107-72-D-A/R have been retired and have been either removed from the site or have been physically disabled.

B. Boilers 10A, 10B, and 10C

Boilers 10A, 10B, and 10C are each 37.1 MMBtu/hr and are located in Colby College's central heating plant. The boilers are Babcock and Wilcox package watertube boilers (Model FM9-57). The boilers are licensed such that not more than two of the boilers operate concurrently.

Boilers 10A, 10B, and 10C were manufactured in 1992 and are subject to EPA New Source Performance Standards (NSPS) Subpart Dc, for boilers with a heat input of 10 MMBtu/hr or greater and manufactured after June 9, 1989.

1. PM and PM_{10}

   Chapter 103 of the Department's regulations and BPT limits are applicable to the boilers. The BPT limits for PM and PM_{10} are based on a previous BACT analysis. The BPT emission limit of 0.10 lb/MMBtu is most stringent. Compliance with the BPT limit is compliance with Chapter 103.

2. SO_2

   The boilers are subject to a previous case-by-case BACT determination for sulfur emissions; therefore, the boilers are not subject to Chapter 106 of the Department's Regulations.

   The boilers are subject to 40 CFR Part 60, Subpart Dc sulfur dioxide standards requiring the use of low sulfur fuel with a sulfur content not to exceed 0.5% by weight.

3. NOx, CO, and VOC

   40 CFR Part 60, Subpart Dc contains no limits for NOx, CO, or VOC emissions. Limits for NOx, CO, and VOCs are based on a previous BACT analysis on the boilers and AP-42, EPA's Compilation of Air Emission Factors.

   BPT for emissions of NOx is the use of Coen reduced NOx burners.

BPT for CO and VOC emissions is good combustion practices and a fuel control valve/ air damper system that allows for setting the boiler up for optimum combustion conditions.

4. Opacity
   Chapter 101 and 40 CFR Part 60, Subpart Dc requirements are applicable. The 40 CFR Part 60, Subpart Dc opacity limit is more stringent. Therefore, only the more stringent 40 CFR Part 60, Subpart Dc limit is included in this license.

   Subpart Dc limits opacity to 20%, measured on a continuous basis with a continuous opacity (COMS) monitor. The boilers are limited to 20% opacity on a six minute average, except for one six minute period per hour, which may not exceed 27% opacity.

   The COMS shall comply with the requirements in 40 CFR Part 60 and Chapter 117 of the Department's regulations.

C. Emergency Diesel Generators
   Colby College operates a 4.9 MMBtu/hr Caterpillar generator (35.7 gallons per hour) and a 2.5 MMBtu/hr Caterpillar generator (17.5 gallons per hour). The 2.5 MMBtu/hr generator supports the Central Steam Plant during power outages and is trailer mounted in order to move to where else is needed for emergency power.

   The emergency diesel generators shall meet BPT through the firing of 0.05% sulfur fuel oil and a limit of 500 hours/year based on a 12 month rolling total.

   Emissions from the emergency generators are obtained using the EPA AP-42 emission factors (Table 3.3-1, dated 10/96) and assuming all sulfur in the fuel oil converts to SO_2.

D. Stationary Internal Combustion Engine (SICE)
   Colby College operates a 0.56 MMBtu/hr stationary internal combustion engine (4.1 gallons per hour). The internal combustion engine will be used for electrical generation during maintenance and construction activities, during power outages, during campus event activities, and during emergencies.

   The diesel generator shall meet BACT through the firing of 0.05% sulfur fuel oil and meeting an operation limit of 500 hours/year based on a 12 month rolling total.

   Emissions from the generator are obtained using the EPA AP-42 emission factors (Table 3.3-1, dated 10/96) and assuming all sulfur in the fuel oil converts to SO_2.

E. Temporary Stationary Internal Combustion Engines (SICEs)
Colby College periodically operates temporary SICEs for electrical generation during maintenance and construction activities, during campus event activities, or during emergencies that exceed the existing emergency diesel units power capacity. Use of temporary SICEs is limited to two weeks or less in duration for each unit brought on site.

The temporary SICEs shall meet BPT through the firing of diesel fuel with a sulfur content not to exceed 0.05% by weight.

F. Solvent Degreaser
The solvent degreaser is a miscellaneous activity subject to Chapter 130 of the Department's Regulations.

G. Gasoline Storage Tank
The gasoline storage tank is a miscellaneous activity subject to Chapter 118 of the Department's Regulations.

H. Annual Emission Limits
Colby College is limited to the following annual emissions, based on a 12 month rolling total:

Total Allowable Annual Emission for the Facility
(used to calculate the annual license fee)

Pollutant*	**Tons/Year**
PM	10.2
PM_{10}	10.2
SO_2	51.1
NO_x	44
CO	15
VOC	4.0

* The facility wide emission caps do not include emissions from #2 fuel use in insignificant activities.

III. AMBIENT AIR QUALITY ANALYSIS

According to the Maine Regulations Chapter 115, the level of air quality analyses required for a renewal source shall be determined on a case-by case basis. Previous modeling demonstrations performed for Colby College demonstrate compliance with Maine Ambient Air Quality Standards (MAAQS). Colby College has not proposed to modify facility operations; therefore the existing MAAAS analysis applies.

ORDER

Based on the above Findings and subject to conditions listed below, the Department concludes that the emissions from this source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards,
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License A-107-71-M-R/M subject to the following conditions:

STANDARD CONDITIONS

(1) Employees and authorized representatives of the Department shall be allowed access to the licensee's premises during business hours, or any time during which any emissions units are in operation, and at such other times as the Department deems necessary for the purpose of performing tests, collecting samples, conducting inspections, or examining and copying records relating to emissions.

(2) The licensee shall acquire a new or amended air emission license prior to commencing construction of a modification, unless specifically provided for in Chapter 115.

(3) Approval to construct shall become invalid if the source has not commenced construction within eighteen (18) months after receipt of such approval or if construction is discontinued for a period of eighteen (18) months or more. The Department may extend this time period upon a satisfactory showing that an extension is justified, but may condition such extension upon a review of either the control technology analysis or the ambient air quality standards analysis, or both.

(4) The licensee shall establish and maintain a continuing program of best management practices for suppression of fugitive particulate matter during any period of construction, reconstruction, or operation which may result in fugitive dust, and shall submit a description of the program to the Department upon request.

(5) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to Title 38 M.R.S.A. § 353.

(6) The license does not convey any property rights of any sort, or any exclusive privilege.

(7) The licensee shall maintain and operate all emission units and air pollution systems required by the air emission license in a manner consistent with good air pollution control practice for minimizing emissions.

(8) The licensee shall maintain sufficient records to accurately document compliance with emission standards and license conditions and shall maintain such records for a minimum of six (6) years. The records shall be submitted to the Department upon written request.

(9) The licensee shall comply with all terms and conditions of the air emission license. The filing of an appeal by the licensee, the notification of planned changes or anticipated noncompliance by the licensee, or the filing of an application by the licensee for a renewal of a license or amendment shall not stay any condition of the license.

(10) The licensee may not use as a defense in an enforcement action that the disruption, cessation, or reduction of licensed operations would have been necessary in order to maintain compliance with the conditions of the air emission license.

(11) In accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department, the licensee shall:

(i) perform stack testing to demonstrate compliance with the applicable emission standards under circumstances representative of the facility's normal process and operating conditions:

a. within sixty (60) calendar days of receipt of a notification to test from the Department or EPA, if visible emissions, equipment operating parameters, staff inspection, air monitoring or other cause indicate to the Department that equipment may be operating out of compliance with emission standards or license conditions; or

b. pursuant to any other requirement of this license to perform stack testing.

(ii) install or make provisions to install test ports that meet the criteria of 40 CFR Part 60, Appendix A, and test platforms, if necessary, and other accommodations necessary to allow emission testing; and

(iii) submit a written report to the Department within thirty (30) days from date of test completion.

(12) If the results of a stack test performed under circumstances representative of the facility's normal process and operating conditions indicate emissions in excess of the applicable standards, then:

(i) within thirty (30) days following receipt of such test results, the licensee shall re-test the non-complying emission source under circumstances representative of the facility's normal process and operating conditions and in accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department; and

(ii) the days of violation shall be presumed to include the date of stack test and each and every day of operation thereafter until compliance is demonstrated under normal and representative process and operating conditions, except to the extent that the facility can prove to the satisfaction of the Department that there were intervening days during which no violation occurred or that the violation was not continuing in nature; and

(iii) the licensee may, upon the approval of the Department following the successful demonstration of compliance at alternative load conditions, operate under such alternative load conditions on an interim basis prior to a demonstration of compliance under normal and representative process and operating conditions.

(13) Notwithstanding any other provisions in the State Implementation Plan approved by the EPA or Section 114(a) of the CAA, any credible evidence may be used for the purpose of establishing whether a person has violated or is in violation of any statute, regulation, or Part 70 license requirement.

(14) The licensee shall maintain records of malfunctions, failures, downtime, and any other similar change in operation of air pollution control systems or the emissions unit itself that would affect emission and that is not consistent with the terms and conditions of the air emission license. The licensee shall notify the Department within two (2) days or the next state working day, whichever is later, of such occasions where such changes result in an increase of emissions. The licensee shall report all excess emissions in the units of the applicable emission limitation.

(15) Upon written request from the Department, the licensee shall establish and maintain such records, make such reports, install, use and maintain such monitoring equipment, sample such emissions (in accordance with such methods, at such locations, at such intervals, and in such a manner as the Department shall prescribe), and provide other information as the Department may reasonably require to determine the licensee's compliance status.

SPECIFIC CONDITIONS

(16) **Boilers 10A, 10B, and 10C**

A. Colby College is licensed to operate boilers 10A, 10B, and 10C with a maximum design capacity of 37.1 MMBtu/hr each.

B. Colby College is limited to firing only two boilers (10A, 10B, or 10C) at any one time in the central heating plant.

C. Colby College is licensed to fire fuel oil, including #6 fuel oil, #2 fuel oil, and specification waste oil, in boilers 10A, 10B, and 10C with a maximum sulfur content not to exceed 0.5% by weight.

D. Colby College shall maintain records of a representative sample of the waste oil utilized. Record shall be kept indicating the quantity (gallons) of waste oil burned in boilers 10A, 10B, and 10C.

E. To demonstrate compliance with the SO_2 emission standard found in Subpart Dc, Colby College shall maintain records of the supplier certification letters for each load of oil received demonstrating that the sulfur content of the fuel delivered to Colby College does not exceed 0.5% by weight.

F. Fuel use shall not exceed 1,300,000 gallons/yr (12-month rolling total) of fuel oil, including #2 fuel oil, #6 fuel oil, and specification waste oil, with a maximum sulfur content of 0.5% by weight. Fuel use records shall be maintained on a monthly basis, in addition to the 12 month rolling total.

G. Emissions from each boiler shall not exceed the following:

Pollutant	lb/MMBtu	lb/hr
PM	0.10	3.7
PM_{10}	0.10	3.7
SO_2	0.50	19.4
NOx	0.36	13.4
CO	0.15	5.6
VOC	0.03	1.1

Compliance shall be demonstrated through stack testing in accordance with the appropriate method found in 40 CFR Part 60, Appendix A, or alternate methods approved by the Department, when requested by the Department.

H. Visible emissions from the main boiler stack shall be limited to 20% opacity, measured as six (6) minute block averages, except for one (1) six (6) minute block average period per hour of not more than 27% opacity.

I. Compliance with the opacity limit on Stack #9 shall be demonstrated by a continuous opacity monitoring system (COMS). Colby College shall operate and maintain the COMS in accordance with 40 CFR Part 60, Chapter 117 of the Department's Regulations, and the Special conditions of this license.

J. Colby College shall comply with the requirements in 40 CFR Part 60, Subpart Dc, relevant to calibration, maintenance, operation, performance testing,

recordkeeping, and reporting of boilers 10A, 10B, and 10C and the required opacity monitor.

(17) **4.9 MMBtu/hr Emergency Diesel Generator**

A. Colby College is licensed to operate a 500 kW Caterpillar (model XG-600) emergency diesel generator with a rated fuel input capacity of 35.8 gallons per hour (4.9 MMBtu/hr).

B. The emergency diesel generator is limited to 500 hours per year of operation, based on a 12 month rolling total. An hour meter shall be maintained and operated on the emergency diesel generator. Colby College shall keep a written log of all operating hours.

C. The emergency diesel generator is licensed to fire 17,900 gallons of diesel fuel per year, 12 month rolling total, with a sulfur content not to exceed 0.05% by weight. Colby College shall maintain records of fuel shipped on site to document the sulfur content of the fuel.

D. Emissions from the emergency diesel generator shall not exceed the following:

Pollutant	lb/MMBtu	lb/hr
PM	0.12	0.60
PM_{10}	0.12	0.60
SO_2	-	0.25
NOx	-	21.6
CO	-	4.7
VOC	-	1.7

E. Visible emissions from the emergency diesel generator shall not exceed 30% opacity on a six (6) minute block average basis, except for two (2) six (6) minute block averages in a three (3) hour period.

(18) **2.5 MMBtu/hr Emergency Diesel Generator**

A. Colby College is licensed to operate a 200 kW Caterpillar (model XQ-225) emergency diesel generator with a rated fuel input capacity of 17.5 gallons per hour (2.5 MMBtu/hr).

B. The emergency diesel generator is limited to 500 hours per year of operation, based on a 12 month rolling total. An hour meter shall be maintained and operated on the emergency diesel generator. Colby College shall keep a written log of all operating hours.

C. The emergency diesel generator is licensed to fire 8,750 gallons of diesel fuel per year, 12 month rolling total, with a sulfur content not to exceed 0.05% by weight. Colby College shall maintain records of fuel shipped on site to document the sulfur content of the fuel.

D. Emissions from the emergency diesel generator shall not exceed the following:

Pollutant	lb/hr
PM	0.30
PM_{10}	0.30
SO_2	0.12
NOx	10.6
CO	2.3
VOC	0.84

E. Visible emissions from the emergency diesel generator shall not exceed 30% opacity on a six (6) minute block average basis, except for two (2) six (6) minute block averages in a three (3) hour period.

(19) **0.56 MMBtu/hr Diesel Generator**

A. Colby College is licensed to operate a 50 kW diesel generator with a rated fuel input capacity of 4.1 gallons per hour (0.56 MMBtu/hr).

B. The diesel generator is limited to 500 hours per year of operation, based on a 12 month rolling total. An hour meter shall be maintained and operated on the diesel generator. Colby College shall keep a written log of all operating hours.

C. The diesel generator is licensed to fire 2,050 gallons of diesel fuel per year, 12 month rolling total, with a sulfur content not to exceed 0.05% by weight. Colby College shall maintain records of fuel shipped on site to document the sulfur content of the fuel.

D. Emissions from the diesel generator shall not exceed the following:

Pollutant	lb/hr
PM	0.10
PM_{10}	0.10
SO_2	0.03
NOx	2.5
CO	0.53
VOC	0.20

E. Visible emissions from the diesel generator shall not exceed 20% opacity on a six (6) minute block average basis, except for two (2) six (6) minute block averages in a three (3) hour period.

(20) **Temporary Stationary Internal Combustion Engines (SICEs)**

Colby College is licensed to operate temporary SICEs for electrical generation in accordance with the following conditions:

A. Each temporary SICE unit shall be limited to discrete periods of operation not exceeding two weeks.

B. Particulate matter emissions from each SICE shall not exceed 0.12 lb/MMBtu.

C. Each SICE is licensed to fire diesel fuel, with a sulfur content not to exceed 0.05% by weight. Colby College shall maintain records of fuel shipped on site to document the sulfur content of the fuel.

D. Visible emissions from each SICE shall not exceed 20% opacity on a six (6) minute block average basis, except for two (2) six (6) minute block averages in a three (3) hour period.

E. Colby College shall maintain records of temporary SICE use. Records shall indicate the size of the unit used, the length of time the unit was in service at Colby College, and the nature of the activity requiring the use of the SICE.

(21) **Facility Emissions**

Facility emissions shall be limited to the following, based on a 12 month rolling total:

Pollutant*	Tons/yr
PM	10.2
PM_{10}	10.2
SO_2	51.1
NOx	44
CO	15
VOC	4.0

* The facility wide emission caps do not include emissions from #2 fuel use in insignificant activities.

(22) **COMS**

The COMS required by this license shall be the primary means of demonstrating compliance with opacity standards set by this Order, statute, state or federal regulation, as applicable. The licensee shall comply with the following:

A. **Performance Specifications**

The COMS shall meet the sampling and performance criteria specified in 40 CFR Part 51 Appendix P, and shall be operated in accordance with 40 CFR Part 60 Appendix F and Chapter 117 of the Department's regulations.

1. Conduct Relative Accuracy Testing (RATA) and/or Performance Audits in accordance with Chapter 117 of the Department's regulations.
2. Develop and maintain an updated quality assurance plan for the COMS in accordance with 40 CFR Part 60 Appendix F and Chapter 117 of the Department's regulations.

B. **Recordkeeping**

For the continuous opacity monitor system (COMS), required by this license, the licensee shall maintain records of the most current six year period and the records shall include:

1. Documentation which shows monitor operational status during all source operating time, including specifics for calibration and audits; and
2. A complete data set of all monitored parameters as specified in this license. All parameter records shall be made available to the Bureau of Air Quality upon request.

3. For the COMS, the records shall include:
   a. Documentation that the COMS is continuously accurate, reliable and operated in accordance with Chapter 117, 40 CFR Part 51, Appendix P, and 40 CFR Part 60, Appendices B and F;
   b. Records of all measurements, performance evaluations, calibration checks, and maintenance or adjustments for the COMS as required by 40 CFR Part 51 Appendix P;

C. **Quarterly Reporting**

The licensee shall submit a Quarterly Report to the Bureau of Air Quality within 30 days after the end of each calendar quarter, detailing the following, for the Continuous Opacity Monitoring Systems (COMS) required by this license.

1. All control equipment downtimes and malfunctions;
2. All COMS downtimes and malfunctions;
3. All excess events of emission and operational limitations set by this Order, Statute, state or federal regulations, as appropriate. The following information shall be reported for each excess event;
   a. Standard exceeded;
   b. Date, time, and duration of excess event;
   c. Maximum and average values of the excess event, reported in the units of the applicable standard, and copies of pertinent strip charts and printouts when requested;
   d. A description of what caused the excess event;
   e. The strategy employed to minimize the excess event; and
   f. The strategy employed to prevent reoccurrence.
4. A report certifying there were no excess emissions, if that is the case.

(23) **Gasoline Storage Tank**

A. The fill pipe shall extend within 6 inches of the bottom of the gasoline storage tank.

B. The licensee shall maintain records of the monthly and annual throughput of gasoline.

(24) **Solvent Degreaser**

Colby College shall label the solvent degreaser with operational standards, equip the degreaser with cover if vapor pressure >15 mmHG at 100°F, close cover when not in use, drain parts for 15 seconds or longer, shall not degrease porous material, keep drafts < 40 m/minute, repair leaks, and keep records of solvent added and removed, in accordance with Chapter 130 of the Department's regulations.

(25) In order to remain a minor source and avoid being subject to Chapter 140 of the Department's regulations, Colby College has accepted federally enforceable restrictions on total facility emissions of 99.9 tons per year (TPY) of any single regulated pollutant, 49.9 TPY of volatile organic compounds (VOCs), 9.9 TPY of any single hazardous air pollutant (HAP), and 24.9 TPY of all combined HAPs, on a rolling 12 month total basis. HAPs are identified by the EPA in regulations pursuant to Section 112(b) of the Clean Air Act (CAA). Compliance with the conditions in this air emission license represents compliance with the federally enforceable emission restrictions.

(26) The term of this Order shall be for five (5) years from the signature below.

DONE AND DATED IN AUGUSTA, MAINE THIS DAY OF 2000.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:_____
MARTHA G. KIRKPATRICK, COMMISSIONER

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: April 11, 2000
Date of application acceptance: April 11, 2000

Date filed with the Board of Environmental Protection: _____

This Order prepared by Sarah Anderson, Bureau of Air Quality